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Threat and Emotions: Mobilizing and Attitudinal Outcomes of a Ballistic Missile Scare

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ABSTRACT

This study examines the false ballistic missile alert that occurred in Hawaii in 2018, which presented a unique opportunity for assessing the civic and mobilizing outcomes of a threat. In the days that followed the scare, we conducted an online experiment to investigate its effects on willingness to engage in activism and concerns about broader issues. Our results show that emotions serve as an important mechanism for channeling threat experiences into concern about specific causes. Those most emotionally affected by the missile scare in Hawaii thought it more important to engage in activities to control the spread of nuclear weapons, protect the environment, and address climate change, relative to a control group on the mainland. Both the intensity and type of emotion play a role. These results shed light on the role of threats and grievances in shaping concern about social and environmental issues. They also suggest that emotions may serve as a bridge that can connect personal, concrete, lived-experiences to more abstract, complex, or future-oriented issues and grievances.

KEYWORDS: threat; emotions; nuclear weapons; environment; social movements.

As threats go, few can rival a nuclear weapon. For people in Hawaii on January 13, 2018, such a threat became all too real when cell phones lit up with an emergency alert: "Ballistic missile threat inbound to Hawaii. Seek immediate shelter, this is not a drill." For the next 38 minutes, until an official notification was sent out correcting the false alert, at least some of the population in Hawaii believed that a nuclear missile that could annihilate them was on its way.

The ballistic missile crisis provides a unique case study for assessing and understanding threats. First, there was a fair amount of variation in what people thought about the missile crisis. Some slept through it, others believed it was fake, and still others took refuge in windowless spaces, believing the end was coming. Such variation provides an opportunity to examine nuances in how individuals experience the same threat differently and is valuable for understanding gradations in emotional reactions. Second, nuclear warfare is seen as distant, unlikely, or divorced from personal life, and potential solutions such as nuclear disarmament are viewed as complex, especially given that disarmament would involve international cooperation. Thus, believing that a nuclear weapon is inbound offers a rare

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chance to assess what happens when a normally abstract, complex grievance threatens to affect daily life in an immediate, concrete, and serious way. It provides an opportunity to examine how personal experience of a threat might change—or not—attitudes toward abstract or future-oriented grievances. Third, for those who study environmental problems, an incoming ballistic missile occupies an interesting niche in terms of threat classification. It is not what is typically conceived of as an environmental threat—such as industrial accidents or toxic contamination—yet still has sweeping environmental ramifications, allowing a chance to analyze the effects of a threat outside the environmental domain on environmental issues. This is particularly relevant for climate change, which poses many of the challenges of nuclear proliferation: it is viewed as abstract, complicated, distant from personal life, and requiring international coordination. Finally, this 2018 event presented a rare opportunity to study people's reactions to nuclear threats as they operate in the real-world. This is in contrast to most studies, which are limited to hypothetical scenarios, given that there are only two cases of nuclear warfare: Hiroshima and Nagasaki.

To understand threat experiences, we are particularly interested in how the type and intensity of emotions felt during the missile scare affected a range of outcomes. Despite their potential to inform processes underlying environmental action and attitudes, emotions are an understudied topic in environmental sociology (Norgaard 2011). In other fields, such as social movements, emotions have received more scholarly attention (Goodwin, Jasper, and Polletta 2001; Jasper 2018). However, while some emotions are well-studied and have been found to have mobilizing properties—such as anger and its variants—others have mixed results, and still others have been examined very little. In our study, we highlight two emotions in particular—fear and sadness. Fear is typically studied as fear of repression, such as fear of arrest by the authorities, and is seen as demobilizing (Smith 1996). Here, we can examine fear as a direct consequence of the threat itself, which may operate differently from fear through repression mechanisms. We predict it will be mobilizing rather than demobilizing. The second emotion is sadness—one that is rarely studied in the social movement literature. With the missile scare, people contemplated the loss of not just their own and loved ones' lives, but the total destruction of the natural world hit by the blast. This threat did not materialize, making the sadness (potentially) short-lived. What are the effects of such punctuated sadness? Both fear and sadness are common emotions experienced when people think of nuclear war (Fiske 1987), making the nature of the threat well-suited for investigating these two less oft studied emotions.

In the days that followed the ballistic missile scare, we recruited participants who were in Hawaii on the morning of the emergency alert to participate in an online experiment, and then contrasted responses with a control group selected from comparable states on the mainland. We sought to leverage this natural quasi-experiment to understand how being exposed to a threat might change hearts and minds, as well as a willingness to engage in political action. We also investigate whether messages of togetherness or division from admired leaders can influence attitudes or behavior. Overall, the results suggest that effects emerging from reactions to the crisis itself were far more influential than messaging attempts, which speaks to the power of such experiences. Specifically, we found that those most emotionally affected by the missile scare not only placed increased importance on activities to control the spread of nuclear weapons, but also on activities meant to protect the environment for future generations and to address climate change. Threat may serve as an emotional bridge that connects fears of environmental catastrophe in the present to more abstract, distant, or future environmental losses.

BACKGROUND

Case Study

In 2017, North Korea successfully tested a series of intermediate-range and intercontinental ballistic missiles, which can travel thousands of miles and are primarily designed to deliver nuclear warheads. The North Korean government then stated that it was capable of launching an intercontinental

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ballistic missile that could carry a nuclear warhead to the United States (McCurry and Borger 2017). Guam, Alaska, and Hawaii are the closest targets. In response, officials for the Hawaii Emergency Management Agency worked on civil defense plans specifically designed to protect residents against a nuclear attack from North Korea. That summer they released official guidelines on how to survive a nuclear detonation—including warnings that the light from the blast can damage eyes, that those in range should seek a shelter, preferably, concrete, and that they should be prepared to stay sheltered for two weeks or until told otherwise (Hauser 2017). Then, the state dusted off the nuclear bomb warning sirens that still existed as relics from the Cold War; on December 1, these sirens were heard for the first time in Hawaii in over 20 years. If North Korea were to launch a missile, it would take less than 20 minutes to reach Hawaii. This means that if the sirens go off, the residents have a short window in which to make decisions and find shelter.

This series of events set the stage for the missile scare. On January 13, 2018, at 8:07 a.m., cell phones in Hawaii received this emergency alert in all capital letters: "BALLISTIC MISSILE THREAT INBOUND TO HAWAII. SEEK IMMEDIATE SHELTER. THIS IS NOT A DRILL". This was followed by longer alerts heard on television and radio stating that a civil danger warning had been issued for Hawaii:

> The U.S. Pacific Command has detected a missile threat to Hawaii. A missile may impact on land or sea within minutes. THIS IS NOT A DRILL. If you are indoors, stay indoors. If you are outdoors, seek immediate shelter in a building. Remain indoors well away from windows. If you are driving, pull safely to the side of the road and seek shelter in a building or lay [sic] on the floor. We will announce when the threat has ended. THIS IS NOT A DRILL Take immediate action measures.

The official correction to the false alert was not sent out until 38 minutes later. This is well past the window during which action can be taken before the missile makes landfall.

The ballistic missile scare was a reminder of the seriousness of the specter of nuclear war, which has loomed for over fifty years but is rarely at the forefront of public conversation. Indeed, one survey found that nuclear war topped the list of what people most fear will put an end to humanity (Roper Center 2014). While people believe that nuclear war would be horrific, they also view it as somewhat unlikely and abstract, and do not think about or worry about nuclear war very often (Fiske 1987; Fiske, Pratto, and Pavelchak 1983). And even though the stakes are high, with the average person believing they will not survive a nuclear holocaust, in the end: "Most people do nothing" (Fiske 1987:210). That is, they do not write antinuclear letters to politicians or editors, sign petitions, or join or donate to organizations working on the issue; this is true in part because many believe there is little they can do to affect or avert nuclear war. Similarly, Lifton (1968) posits that there is a nuclear-induced psychic numbing effect that occurs when contemplating the sheer scale of the loss that occurs with nuclear annihilation. In the case of the ballistic missile crisis in Hawaii, however, the nuclear threat was impossible to ignore. In what ways does such a personal experience with a threat—moving it from the abstract and distant to the concrete and personal— influence changes in attitudes and behaviors?

Focusing Events, Grievances, and Emotions

Sudden, dramatic events can direct both the attention of the general public and decision makers to a particular problem. Thomas Birkland lists the traits of such a focusing event as being sudden, relatively uncommon, harmful or potentially harmful, concentrated in a particular area, and known to policy makers and the public simultaneously (1998:54). Focusing events can influence agenda-setting in policy domains and increase mobilization, especially in arenas with well-organized advocacy coalitions that can use the event to press their case (Birkland 1998). Political players and advocacy groups

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point to the possibility that people can be guided in their reactions. Leaders may have the power to influence the perceptions of the larger population. Presidents, at least the popular ones, can affect public opinion (Page and Shapiro 1984; Page, Shapiro, and Dempsey 1987). Consequently, we also look at whether messaging effects, such as priming thoughts of divisiveness or togetherness, after a crisis can influence attitudes and behaviors.

Similar to the idea of focusing events, social movement scholarship assesses how suddenly imposed major grievances can inspire grassroots activism and protest, such as the case of the Three Mile Island nuclear reactor accident (Walsh 1981). Such dramatic disasters are one class of events that can constitute a moral shock, where people seek out political action to address an issue (Jasper 1997). Focusing events and moral shocks illustrate the power of dramatic grievances, but some grievances fail to resonate with the general public. As Snow and Benford (1988) found in their work on framing strategies, being able to resonate with the public or offer clear diagnoses of problems and plans for solutions is important for drawing attention and resources to a cause. For nuclear disarmament, organizers worked to add a sense of urgency (e.g., the doomsday clock) and to increase feelings of personal efficacy, but activists themselves sometimes admitted the frustrations of trying to effect change in a realm where, in the words of one, it "mainly has to come from the White House" (Benford 1993:206).

For such issues, where effects seem unreal and solutions complex, emotions may hold promise for bridging connections back to personal life and increasing resonance of the topic. Moral shocks are marked by an emotional reaction, such as anger, sadness, disgust, or disappointment (Jasper 2018). They can recruit newcomers to an issue or solidify existing commitments. Highlighting the role of emotions in these events is important given their relevance to mobilization more generally (Goodwin et al. 2001; Jasper 2011; Jasper 2018; Van Ness and Summers-Effler 2019). Social movement scholarship, however, tends to focus on some emotions more than others. Forms of anger, including moral outrage and righteous indignation, have been well-studied and are powerful mobilizers, motivating both recruitment and commitment to activism (Gamson 1992; Jasper 1997; Nepstad and Smith 2001). A few studies have examined sadness, such as those which look at how AIDS activism in lesbian and gay communities worked to transform feelings of grief into anger and action (Gould 2009). As the author notes, grief is a complex combination of many sentiments, including loss, depression, fear, anger, and dread, but sadness also plays a prominent role. Whittier (2001) too looks at grief in the child sexual abuse survivors' movement and finds that two main categories of emotions are displayed: the emotions of trauma, which includes grief, fear, shame, and helpless anger, and the emotions of resistance, which include pride, happiness, love, confidence, and righteous anger. Fear is typically seen as a demobilizing emotion that reduces political activity (Smith 1996), although intermediate levels of fear may increase mobilization (Azab and Santoro 2017). However, fear is usually studied in relation to repression—that is, fear of authorities' actions, such as arrest; or fear of peer-sanctioning if one engages in activism (Linden and Klandermans 2006; Smith 1996). This might operate quite differently from fear that stems from a threat or grievance, such as the fear of a nuclear weapon. Threats can evoke a known mobilizing emotion—anger—but they can also create fear. In such a scenario, fear could motivate political action.

Social movement scholars have found that threats and declines in economic or political power can increase activism (Almeida 2019; Caren, Gaby, and Herrold 2017; McVeigh 1999). Other scholars have specifically linked threats to emotions to better understand how they are transformed into action (Bray, Shriver, and Adams 2019). For example, Barberena, Jimenez, and Young (2014) examined the role of threats in the student walkouts for immigration issues, and found that defying authority transformed feelings of anxiety into exhilaration. The authors also found that prior to the walkouts, a general mood of uncertainty and anxiety telescoped into concrete fear of an immediate threat, helping to move participants from paralysis to action. Thus, experiencing threats directly may forge a personal connection to more abstract or distant issues and increase a desire to take action. Emotional experiences may add to the urgency, given the connections between emotions and political action. Based on scholarship

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on anger and activism, we would expect threats that evoke anger to trigger a willingness to engage in confrontation and political action. Anger encourages action, but it may discourage reflection, especially relative to more cautious emotions such as fear (Jasper 2018). It is possible that less arousing emotions, like sadness, may have effects outside of activism, such as spurring thought and reflection, which might be useful tools when drawing connections to abstract, future-oriented issues.

The study of emotions and their effect on attitudes and behaviors in the environmental realm is comparatively sparse, although interest in the topic is growing (Jacobson 2016; Lockie 2016). Emotions are important to understanding both inaction and action on environmental issues. In the domain of *inaction*, individuals may seek to avoid negative emotional reactions and interpersonal conflicts by not discussing environmental problems such as global climate change (Norgaard 2011). In the realm of *action*, being emotionally affected by an environmental threat, especially a large, human-caused disaster, can be a strong predictor of pro-environment political action, behavioral changes, and attitudinal shifts (Bergstrand and Mayer 2017). Consequently, we hypothesize the following:

H1: People in Hawaii will express more interest in activism, place higher importance on activities specifically related to the threat (reducing the spread of nuclear weapons), and believe it more important to engage in activities in related or forward-looking domains (such as protecting the environment and others), relative to the control group from the mainland.

H2: These effects will be stronger for those more emotionally affected by the crisis than for participants less emotionally affected by the missile scare, relative to the control group from the mainland.

METHODS, MEASURES, AND ANALYSIS

Participants

The main experimental effect of interest—the ballistic missile threat—leverages a real-world event, making this a natural experiment, although a quasi-experiment, given the lack of random assignment into experimental and control groups. In experiments, it is ideal to have people with similar traits in the treatment and control groups so that researchers can home in on the effects of the manipulation. To help minimize effects other than the threat, such as traits associated with the state of Hawaii, we used a state-based matching strategy when selecting participants for the control group. In particular, we paid attention to political orientation, since Hawaii leans liberal. We used a ranking of states' conservative or liberal leanings, produced by Gallup through a telephone survey of a random sample of 177,788 adults (Newport 2017). The closest matching states to Hawaii in term of political orientation were Oregon, California, Maryland, Rhode Island, and New Jersey. Ultimately, we selected Oregon and California to represent West Coast dynamics, which included the increased risk of experiencing a nuclear missile threat, and Rhode Island and New Jersey to mirror the small-state nature of Hawaii. Thus, our comparison group is a batch of participants pulled from these various locations (Comparison group N=253; Hawaii N=131; Total N=384).

We provide data on the traits of participants in Hawaii and the control group in Table 1. The largest differences are that the control group is more white, female, and liberal than the experimental group; we control for these and other demographic traits in our models. Interestingly, many of the issues we examine—the environment, climate change, education, and nuclear weapon control—tend to be associated with leftist movements, suggesting that if bias exists, it would be to increase concern for these issues for the control group. That we find significant effects for those who experienced the missile crisis is a good indicator of the power of that threat.

Descriptive statistics. Participants were, on average, 41 years of age and had a median income in the $50,000–$59,999 range. A little more than half (55 percent) were female, and about half had children (51 percent). A slight majority of the participants were White, non-Latino (55 percent) although that

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Table 1. Descriptive Traits of Participants and Actions Taken during the Missile Scare

	Hawaii Mean (SD) or %	*Control Group Mean (SD) or %*
Age	44.79 (12.93)	39.55 (12.22)
Female	50.38%	58.50%
Children	51.91%	50.59%
Married	47.33%	41.90%
White, non-Latino	25.95%	70.36%
Makes Less than $50,000	37.40%	44.66%
Associate Degree or Less	53.44%	48.22%
Liberal	32.82%	45.85%
Moderate	43.51%	30.83%
Conservative	23.66%	23.32%
For Those in Hawaii during the Missile Scare		
Sought Shelter	32.00%	
Worried about harm to people I care about	66.40%	
Worried about harm to myself	56.35%	
Worried about my own death	44.80%	
Worried about the death of those I care about	62.70%	
Tried to contact loved ones	51.59%	
Felt somewhat high to very high levels of emotion	25.00%	
Felt moderate levels of emotion	19.53%	
Felt no to low levels of emotion	55.47%	

proportion for those in Hawaii was much lower (26 percent), reflecting the high levels of racial and ethnic diversity in the state. In terms of politics, liberal skew is to be expected, given that Hawaii is liberal and we matched on liberal states, with the result that 41 percent of participants are or lean liberal, 35 percent are moderate, and 23 percent are or lean conservative. Of the participants in Hawaii, 25 percent felt somewhat high to very high levels of emotion, while 75 percent felt no to moderate levels of emotion in response to the missile crisis.

Data Collection

After learning of the Hawaii missile crisis on January 13, we designed and launched our experiment as soon as possible to capture effects of the event. Our earliest data were collected 33 hours after the event, and we stopped collecting data nine days after the event. Given that the power of experiencing a missile threat could wane over time, we also include a measure of time elapsed from the event in our models. We initially collected data through Amazon Mechanical Turk (MTurk) but found the data collection to be slow; not wanting to miss the window of the event, we then contracted with Survey Sampling International, LLC (SSI) to distribute our experiment online as well, beginning three days after the missile threat (SSI N=237; MTurk N=147). We include data from both research populations in our analysis, and we control for the source of the data in our models. We also included a check in our instrument, asking if the respondent had recently taken a similar survey that asked these questions (assuring them it would not affect eligibility); we dropped those that answered "yes" in our data analysis to ensure that participants did not take the experiment twice. On both platforms, we limited responses by IP address to target people in Hawaii or the four control states.

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Measures

After reading an informed consent page, the participants were told, "For research, it is sometimes helpful for us to get a sense of your daily routine, and how it may change. Please think back to what you were doing at about 8:00 a.m. on Saturday January 13, 2018 and write down exactly what you thought and experienced during the next 45 minutes, to the best of your recollection." This provided an opportunity for those in Hawaii to qualitatively explain their experiences and also served to make the event more salient by asking participants to relive that time period. After this prompt, participants were asked what state they were located in on Saturday January 13, 2018, and whether they had recently completed a similar survey that asked these questions. Next, they were randomly assigned to one of three conditions (control, togetherness, or divisive quotations—explained below). This was followed by a series of questions asking about activism, trust, future events, group equality, demographic controls, and the importance of engaging in issue-related activities. The instrument also asked several questions regarding jury scenarios, helping behaviors, personal lifestyle decisions (health and retirement), presidential approval, and a couple of open-ended questions (not included here for space reasons). At the end of the survey, participants were asked about the ballistic missile threat. For those in Hawaii, more detailed questions were asked about their reactions and actions taken during the missile scare.

Throughout the instrument we included checks to ensure the participants were paying attention, such as a grid question stating, "please mark 'somewhat willing' on this row," and we dropped any participants who failed the checks.

Experimental Conditions

Hawaii missile alert. For the threat condition we asked, "In which state were you in on Saturday January 13, 2018?" This served us slightly better to capture people who may have been traveling the day of the event than asking if they resided in Hawaii. Tourists in Hawaii did receive the alert on their cell phones. For participants in Hawaii, reactions from the missile alert ranged from not knowing about it at the time to thinking death was imminent. To capture this range, we used a measure asking participants if they were "emotionally affected by the missile situation," dividing those who were affected weakly (1=Not at all to 4=Moderate levels of emotion) from those affected more strongly (5=Somewhat high levels of emotion to 7=Very high levels of emotion), with both compared to the reference group of participants not in Hawaii. The results section offers richer description of the degrees to which people were affected (or not) by the missile alert.

For the emotion-specific analyses. If emotions were significant predictors of an outcome in the general models, we then ran additional models looking at the type of emotion. To do so, we asked, "To what extent, if at all, did you feel the following emotions immediately after receiving the missile alert notification yesterday?" Then participants were asked about each of the emotions of fear, sadness, anger, and shock. For each emotion type, these were then split into a strong emotional group (5=High Levels and 6=Extremely High Levels), and a weak emotional group (1=Not At All, 2=Just a Little, 3=Low Levels and 4=Moderate Levels), with both compared to the reference group of participants not in Hawaii.

In addition to the natural quasi-experiment, we wanted to test whether messages from authority figures could sway reactions and responses and randomly assigned participants to one of three conditions. We chose two individuals most Americans think of as effective leaders: George Washington and Abraham Lincoln. We then selected quotations that either invoked war and divisiveness (Washington condition) or peace and togetherness (Lincoln condition). Participants were asked to select all the quotations that they thought were originally said by [Lincoln or Washington]; the act of selecting quotations was designed to keep them on task and participating, and correct answers were shown afterward to indicate that the respected leader indeed stated some of these sentiments. For the control condition, participants simply viewed wording that thanked them for their time so far.

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Demographic and Control Variables

Basic demographics included age (in years), sex (1=Female; 0=Male), education (recoded to a 7 point scale where 1=Less than high school and 7=Professional (JD/MD) or doctoral degree); Race (recoded to 1=White, not Latino; 0=all other racial/ethnic categories); income (12 point scale where 1=less than $10,000 and 12=$150,000 or more); marital status (recoded to 1=Married; 0=all other categories); children (1=Yes; 0=No); and political orientation (7-point scale where 1=Very Liberal and 7=Very Conservative).

Two items assessed feelings toward others. Trust was measured through a modified question from the General Social Survey that had respondents select an answer on a scale between "you can't be too careful in dealing with people" (=1) and "most people can be trusted" (=7). Opinions toward groups and equality came from five items selected from the social dominance orientation scale (Pratto et al. 1994) that assessed positive or negative reactions to statements such as, "Some groups of people are simply inferior to other groups," and "We would have fewer problems if we treated people more equally." The scale assesses beliefs about hierarchy or egalitarianism across groups in society. Items were reverse-coded as needed, then summed and averaged into a composite index (Cronbach's α =.77). Higher values indicate more support for egalitarianism.

Two items referred to the timing and mode of the survey. *Data source* refers to whether data were collected through Amazon Mechanical Turk or Survey Sampling International (SSI=1, MTurk=2). *Survey timing* measures the number of hours that had passed since the missile alert was originally sent out and the time (date and hour) each survey was submitted.

Dependent Variables

We investigated several outcomes in our analyses regarding activism and issue-specific activities.

Activism. Participants were asked to imagine that someone knocked on their door and asked that they perform the following actions: sign a petition for an issue you care about; attend a peaceful protest for an issue you care about; or attend a disruptive protest for an issue you care about (1=Not at All Willing to 6=Extremely Willing). For the final model, items were summed and averaged into a composite measure of activism (Cronbach's α =.73).

Issue-specific activities. Participants were asked how important they thought it was to engage in the following activities: to invest in infrastructure for the country; to invest in education for the country; to protect the environment for future generations; to address climate change; and to control the spread of nuclear weapons (1=Not at All Important, 6=Extremely Important).

Analysis

Although we did not expect two-way interaction effects between the Hawaii and messaging conditions for activism or issue-related activities, we did test for them. We did not find significant interactions, nor did their addition improve model fit (model fit was evaluated using likelihood-ratio tests). Consequently, we do not include the interaction terms in our final models for those outcome variables. In the models, the reference group for the Hawaii strong emotions and Hawaii weak emotions conditions were participants not in Hawaii. The reference group for the messaging conditions was the control group receiving neither togetherness nor divisive prompts. We used OLS regression and list-wise deletion for any missing data, which was minimal (3 cases).

RESULTS

Qualitative Comments

Our primary experimental condition of interest was the ballistic missile alert in Hawaii. Respondents in Hawaii reported a variety of reactions to the alert—some slept through it while others ran for shelter. Specifically, when asked how they first found out about the inbound ballistic missile, 12.5 percent marked that at the time they did not know that it was happening. The alert occurred early in the

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morning and some were asleep when it was sent out. It is likely that more would have not known except that the emergency alarm on the cell phone woke people up. Some reported how jolting this was—to be sleeping one moment and then told the next that a ballistic missile was inbound and to seek immediate shelter.

The majority of the respondents in Hawaii (87.5 percent) heard about the inbound ballistic missile through the text message, a person told them, or they found out some other way, such as the news. For those who did know about the missile alert, there were gradations in the reactions. Some were able to leverage personal connections to quickly figure out that the missile threat was false; for example, one woman wrote that in response to the alert, "I then tried not to panic and tried to figure out what to do. I found out quickly that it was not real as my husband works for the police department. That took about 10 minutes to find out." Others were reassured by claims that it was false on the internet or social media. Some were unconcerned, either not believing it or thinking it was a mistake, such as one respondent who wrote, "I did not do much, I stayed home. I did not panic whatsoever." Others chose inaction for different reasons: "I didn't panic nor did I seek shelter. If a ballistic missile were to hit our island I think it would be devastating to stay alive after the initial blast."

For many others, however, this was quite disturbing, with 45 percent worrying they might die (see Table 1). One respondent wrote:

> I was sleeping and woken up with the emergency alert saying that "missile is on the way and seek shelter and not a drill." I was terrified and immediately talked to my husband to see if it was real or not. We gather our dogs and some food and necessities and hid into our closet. We each called our family and also called our neighbor who is a firefighter to see if this warning was real or not and we tried to hide until we heard that the warning was false. We panicked and were in shock. Tears came down and I just didn't know what we were supposed to do at that time. We were so tired after that and we didn't do anything the whole day.

Many people tried to seek shelter, including about a third of our respondents. One described the situation as "mass hysteria," and another said she, "Looked outside, cars were zooming and honking, people were frantic. Gathered my family and shut everything tight and stayed away from all openings and prepared ourselves the best we could." A respondent working at Wal-Mart wrote that he "conferred with my manager so we could safely prepare our customers to shelter in a safe way. We began announcing via loudspeaker that a middle threat alert requires we shelter in the photos. We then began telling people in the parking lot about the threat." Another wrote that she "woke my children up and we ran to Walgreens to take shelter, since it's across the street from my house."

About two-thirds of our respondents worried about harm or death to people they cared about, and about half tried to contact loved ones. One woman wrote, "I was attempting to contact loved ones to verify their safety and location. And most importantly, to let them know that I loved them." Another respondent describes her family reaching out to her: "Father calls, his workplace has him in the basement of his building and hopes this is a false alarm."

Some even began planning what to do after the missile struck, such as one man who wrote, "I proceeded to find shelter at my home, and gather everything we needed to survive should we survive the blast. Nearly 40 minutes later we got notice that it was a false alarm and that there was no missile heading for Hawaii. Throughout the whole ordeal I had an adrenaline rush, and at the same time I was prepared to die." Another was worried about how to "save as much water without a tub." Even after receiving official notice of the error, people took some time to recover. One person wrote that after the confirmation of the false alert, "The next 45 minutes, I kept sitting and waited for my heart rate to return to normal."

The responses reveal differences in the intensity of the reaction, as well as in the extent and type of emotions experienced. One woman describes her experiences, noting multiple emotional states:

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> I was sleeping, but around 8:08 a.m. I was woken up by the civil defense warning going off on my cell phone which was on top of the nightstand. The alarm said, "Ballistic missile was inbound to Hawaii. Seek immediate shelter. This is not a drill." I was naturally terrified. I ran into the living room and thankfully, my husband had returned home early from checking out the surf on the beach so we were together. We turned on the radio and the television to see what we could find out because we heard no warning sirens, however, the sirens weren't working on a previous drill test by the state so that fact didn't affect our panic. What did we do???? We tried to call our adult children in the mainland, but the cell phones were jammed at this point. I managed a 3 sentence private joint message to them on Facebook, mainly saying goodbye and sending our love. We jumped in the bathtub together which would have done nothing to protect us from a nuclear blast. We experienced shock, then fear, then anger that our lives were going to be ended in this way. It felt so surreal. Basically, we hugged each other. My husband said, "it's been a good run." It took 38 minutes for the state to send out a message that it was a mistake. We do not EVER want to go through that again.

Here, we see how both emotional intensity and different emotions—shock, fear, and anger—are interwoven throughout the experience. Emotions can also unfold as a process over time. Sometimes respondents noted that the experience was initially marked by fear but that this changed to anger once they learned it was a mistake. For example, one person wrote:

> I was panicked frightened scared and thought I was going to die and had no further instruction until I believe 8:47 when we finally got another message on my phone saying it was a mistake then I was mad because it had taken so long for them to tell us and now I don't have trust in my state system for an emergency that's what I was doing.

One man too, noted the progression of emotions over time, in his case from concern to relief: "Thank goodness it was a false alarm but the emotions of feeling helpless and then feeling relieved was such a roller coaster of feelings."

Fear and shock appear often in responses and anger is also mentioned, although less frequently. However, respondents tended not to use the word "sad" or "sadness" in these open-ended responses, despite indicating the emotion on survey items. More often the sadness was suggested by the context, rather than being overtly stated. For instance, one person wrote, "I was in my office sitting at my computer. There was an alert on my phone and my thoughts were to call my daughter and tell her I loved her and that I would see her in the next world. I was feeling very lonely and scared." This image of sitting alone and in fear suggests an unspoken sense of sadness. Another respondent wrote, "Thought it was the end for us, anger, comradery, good byes. . ." This echoes the sentiment in previous examples of multiple emotions playing out in the event, but it also seems marked by a sense of sadness at the impending loss.

Given these gradations in the reactions, including that some did not even know about the missile alert, it is analytically helpful that we split participants in Hawaii into two groups based on whether they were deeply affected by the missile crisis (somewhat high levels of emotion to very high levels of emotion) from those less affected (no to moderate levels of emotion). This is necessary for our theoretical interest in emotions, but it also helps us zero in on the effects of the threat.

QUANTITATIVE RESULTS

The Ballistic Missile Threat, Emotions, and Issue Areas

The results show strong support for the idea that emotions were positively associated with a variety of outcomes. Participants in Hawaii who indicated that they experienced strong emotions during the ballistic missile threat were significantly more concerned about the environment, climate change, and

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Table 2. Results from Regression Models Predicting Activism Willingness and the Importance of Issue-specific Activities

	Model 1:		*Model 2:*		*Model 3:*		*Model 4:*		*Model 5:*		*Model 6:*	
	Activism		*Infrastructure*		*Education*		*Environment*		*Climate Change*		*Nuclear Weapons*	
HI Emot. Strong	−0.114	(0.218)	−0.158	(0.265)	0.288	(0.237)	0.549*	(0.216)	0.520*	(0.249)	0.857***	(0.232)
HI Emot. Weak	−0.043	(0.164)	−0.263	(0.200)	−0.105	(0.178)	0.094	(0.163)	0.040	(0.187)	0.324+	(0.175)
Togetherness	0.100	(0.136)	0.049	(0.166)	−0.117	(0.148)	−0.035	(0.135)	−0.094	(0.155)	−0.088	(0.145)
Divisiveness	0.281*	(0.134)	0.076	(0.164)	−0.079	(0.146)	−0.018	(0.134)	−0.044	(0.154)	0.014	(0.143)
Age	−0.022***	(0.005)	0.017**	(0.006)	−0.005	(0.005)	−0.012*	(0.005)	−0.013*	(0.006)	0.005	(0.005)
Sex	0.148	(0.117)	−0.251+	(0.142)	−0.027	(0.127)	0.249*	(0.116)	0.279*	(0.133)	0.187	(0.124)
Race	0.164	(0.127)	0.009	(0.155)	0.080	(0.139)	0.244+	(0.127)	0.156	(0.145)	0.122	(0.136)
Politics	−0.244***	(0.039)	−0.114*	(0.048)	-0.212***	(0.043)	−0.300***	(0.039)	−0.444***	(0.045)	−0.087*	(0.042)
Education	0.008	(0.044)	0.135*	(0.054)	0.094+	(0.048)	0.077+	(0.044)	0.114*	(0.051)	0.056	(0.047)
Income	−0.015	(0.018)	0.030	(0.022)	0.021	(0.020)	0.021	(0.018)	0.034	(0.021)	0.044*	(0.019)
Married	−0.126	(0.134)	0.096	(0.164)	−0.020	(0.146)	−0.097	(0.134)	−0.182	(0.153)	−0.309*	(0.143)
Children	0.519***	(0.137)	0.010	(0.167)	0.459**	(0.149)	0.415**	(0.136)	0.184	(0.156)	0.351*	(0.146)
Trust	0.131**	(0.040)	0.076	(0.049)	0.085+	(0.043)	−0.026	(0.040)	−0.061	(0.046)	−0.009	(0.043)
Group Equality	0.150**	(0.055)	0.154*	(0.067)	0.331***	(0.060)	0.321***	(0.055)	0.371***	(0.063)	0.301***	(0.059)
Survey Time	−0.001	(0.002)	0.002	(0.002)	0.002	(0.002)	0.002	(0.002)	0.002	(0.002)	−0.002	(0.002)
Data Source	−0.482***	(0.132)	0.003	(0.161)	0.105	(0.144)	−0.090	(0.132)	−0.202	(0.151)	−0.159	(0.141)
Constant	3.744***	(0.565)	1.795**	(0.688)	2.241***	(0.615)	3.749***	(0.562)	3.907***	(0.645)	2.993***	(0.602)
N	381		381		381		381		381		381	
R^2	0.258		0.088		0.212		0.313		0.375		0.137	

Notes: Standard errors in parentheses. Unstandardized coefficients are presented. + p<.10, * p<.05, ** p<.01, *** p<.001. Two-tailed tests. Adjusted R^2.

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nuclear weapons relative to participants from the mainland. Participants in Hawaii who experienced low levels of emotions in response to the missile crisis did not significantly differ from mainlanders on these outcomes in the general models (see Table 2), although subsequent analyses focused on specific emotions do show significant effects for weak emotions, relative to the control group. Unsurprisingly, the largest effects from emotions were on the outcome of controlling the spread of nuclear weapons. Also unsurprisingly, this positive effect was strongest for those most deeply moved by the missile scare (b=.857, $p<.001$), although it also approached significance for those slightly affected by the missile alert (b=.324, $p=.064$) relative to participants not in Hawaii (see Table 2). The unstandardized coefficient for the nuclear weapons outcome (b=.857) indicates that those in Hawaii who experienced strong emotions as compared to those not in Hawaii were associated with almost a full point increase in believing nuclear weapon control was important: so, for instance, the difference between thinking the issue was moderately important to highly important. The standardized coefficient (betas not reported in tables, but where relevant noted in text) for strong emotions ($\beta=.196$) was second only to group equality, surpassing all demographic traits, including political orientation, in the nuclear control model. The experimental conditions had no significant effects on opinions about infrastructure and education, although several demographic variables did.

Believing it is important to engage in activities to protect the environment for future generations (b=.549, $p=.012$) and address climate change (b=.520, $p=.037$) also were higher for participants strongly emotionally affected by the crisis relative to participants not in Hawaii. In combination with demographic variables, these factors explained about a third of the variation in issue importance (Model 4: Environment $R^2=.313$; Model 5: Climate Change $R^2=.375$) (see Table 2). The model assessing the importance of controlling nuclear weapons had a lower R-squared ($R^2=.137$). The standardized coefficient for the effect of strong emotions on protecting the environment ($\beta=.120$) surpassed most demographic traits—including age, sex, and race—although the effect size was less than that of politics, group equality, or having children.

Specific Emotions: Fear, Sadness, Anger, and Shock

For outcomes that showed significant general emotional effects (climate change, environmental protection, and nuclear weapons), we wanted a deeper analysis of the type of emotions in operation. To do so, we ran separate models with each of the four emotion types: fear, sadness, anger, and shock (please see Tables 3, 4, 5 and 6). We then divide those in Hawaii into two groups—those who experienced high or extremely high levels of the emotion and those who experienced no to moderate levels of the emotion—and compare each to the control group on the mainland. This analysis allows us to examine whether there are separate effects for emotion types—for instance, whether experiencing anger in response to the missile scare had different effects from experiencing sadness.

All emotion types had significant positive effects in the nuclear weapons domain, and for almost all, both strong and weak emotions had significant effects relative to the control group (specifically, fear was the only emotion where weak emotions were not significant, but it did approach significance at $p=.059$). However, as expected, the effect size was larger for those experiencing strong emotions. The standardized coefficients for the effects of the strong emotions of fear, anger, sadness, and shock on nuclear weapon control was larger than all other variables except opinions on group equality (strong emotion βs ranged from .165-.196). This made it more powerful than the demographic variables, including political orientation. For strong emotions, the two largest effect sizes were for fear ($\beta=.196$, $p<.001$) and anger ($\beta=.181$, $p<.001$). Additionally, the unstandardized coefficient for those in Hawaii who experienced strong anger shows that this group was associated with an entire unit increase in concern about controlling nuclear weapons (b=1.01), relative to the non-Hawaii group.

Interestingly, in the environmental domain, only one emotion stood out in the results: sadness. Having strong feelings of sadness in response to the missile scare, relative to the control group on the

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Table 3. The Effects of Fear on the Importance of Issue-Specific Activities

	Model 1 Environment		*Model 2 Climate Change*		*Model 3 Nuclear Weapons*	
HI Fear Strong	0.402+	(0.223)	0.395	(0.256)	0.885***	(0.238)
HI Fear Weak	0.163	(0.162)	0.101	(0.186)	0.328+	(0.173)
Togetherness	−0.024	(0.136)	−0.082	(0.156)	−0.073	(0.145)
Divisiveness	−0.004	(0.134)	−0.030	(0.154)	0.026	(0.143)
Age	−0.013*	(0.005)	−0.014*	(0.006)	0.005	(0.005)
Sex	0.260*	(0.117)	0.287*	(0.134)	0.179	(0.125)
Race	0.245+	(0.127)	0.157	(0.146)	0.120	(0.136)
Politics	−0.301***	(0.039)	−0.445***	(0.045)	−0.086*	(0.042)
Education	0.078+	(0.044)	0.116*	(0.051)	0.060	(0.047)
Income	0.021	(0.018)	0.034	(0.021)	0.044*	(0.019)
Married	−0.087	(0.134)	−0.172	(0.154)	−0.295*	(0.143)
Children	0.429**	(0.137)	0.196	(0.157)	0.345*	(0.146)
Trust	−0.027	(0.040)	−0.062	(0.046)	−0.007	(0.043)
Group Equality	0.320***	(0.055)	0.371***	(0.064)	0.304***	(0.059)
Survey Time	0.002	(0.002)	0.002	(0.002)	−0.002	(0.002)
Data Source	−0.082	(0.132)	−0.195	(0.152)	−0.154	(0.141)
Constant	3.766***	(0.565)	3.917***	(0.648)	2.962***	(0.602)
N	381		381		381	
R^2	0.307		0.371		0.137	

Notes: Standard errors in parentheses. Unstandardized coefficients are presented. + p<.10, * p<.05, ** p<.01, *** p<.001. Two-tailed tests. Adjusted R^2.

mainland, significantly increased perceptions of the importance of engaging in activities to protect the environment (b=.689, p=.007) and to address climate change (b=.657, p=.026). For environmental protection, the standardized coefficient for strong sadness (β=.127) indicated an effect size that was less than that of political orientation, having children, or concern for group equality, but higher than all other demographics, including age, sex, race, and education. The standardized coefficient for sadness in the climate change model was not as strong (β=.100), but about on par with the effect of education (β=.109).

Messaging on Togetherness or Divisiveness

We also wanted to investigate whether quotations from admired leaders after a crisis, especially a war-related threat, could affect participants' attitudes or intended behaviors, in particular regarding nuclear weapons. Most of the outcomes were not affected by the messaging conditions. An exception, however, was activism (see Table 2). Those who read quotations pertaining to war and enemies were more willing to engage in activism than were those in the control group not given quotations (b=.281, p=.037), an effect not found for those exposed to quotations on peace and togetherness. A number of demographic and control variables—age, politics, children, trust, group equality, and data source—also had significant effects. Overall, these variables explained about a quarter of the variation in willingness to engage in activism (Model 1 Activism: R^2=.258).

Demographic and Control Variables

While not of primary interest, several demographic and control variables deserve note. Unsurprisingly, political orientation was significant across the issue domain models, with

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Table 4. The Effects of Sadness on the Importance of Issue-Specific Activities

	Model 1 *Environment*		*Model 2* *Climate Change*		*Model 3* *Nuclear Weapons*	
HI Sadness Strong	0.689**	(0.255)	0.657*	(0.293)	0.875**	(0.274)
HI Sadness Weak	0.129	(0.156)	0.078	(0.179)	0.396*	(0.167)
Togetherness	−0.031	(0.135)	−0.089	(0.155)	−0.082	(0.145)
Divisiveness	−0.019	(0.134)	−0.045	(0.154)	0.018	(0.144)
Age	−0.013*	(0.005)	−0.014*	(0.006)	0.004	(0.005)
Sex	0.243*	(0.116)	0.273*	(0.133)	0.191	(0.125)
Race	0.261*	(0.127)	0.174	(0.145)	0.139	(0.136)
Politics	−0.300***	(0.039)	−0.444***	(0.045)	−0.087*	(0.042)
Education	0.083+	(0.044)	0.120*	(0.051)	0.062	(0.047)
Income	0.020	(0.018)	0.033	(0.021)	0.044*	(0.019)
Married	−0.100	(0.134)	−0.186	(0.153)	−0.309*	(0.144)
Children	0.433**	(0.135)	0.204	(0.155)	0.376**	(0.145)
Trust	−0.029	(0.040)	−0.065	(0.046)	−0.014	(0.043)
Group Equality	0.324***	(0.055)	0.374***	(0.063)	0.302***	(0.059)
Survey Time	0.002	(0.002)	0.002	(0.002)	−0.002	(0.002)
Data Source	−0.087	(0.131)	−0.199	(0.151)	−0.154	(0.141)
Constant	3.746***	(0.561)	3.906***	(0.645)	3.010***	(0.603)
N	381		381		381	
R^2	0.315		0.376		0.132	

Notes: Standard errors in parentheses. Unstandardized coefficients are presented. + p<.10, * p<.05, ** p<.01, *** p<.001. Two-tailed tests. Adjusted R^2.

conservatives placing less importance on these various issues than liberals. Political identification was particularly strong for environmental protection and climate change, and easily the strongest effect across these models. However, this was not true for the nuclear weapons control models, where political orientation was significant, but the effect size ranked lower than several other variables, including the effects of strong and weak emotions, across multiple models. For example, in the general models presented in Table 2, the effect size of politics for environment was β=-.373; for climate change, it was β=-.458, and for controlling nuclear weapons, it was β=-.113. Thus, the effect size of politics on nuclear weapons is about a fourth of what it is for the environmental outcomes. Another demographic variable with widespread effects was having children. This was significant and positive for willingness to engage in activism, and for support for the issue domains of education, environment, and nuclear weapons control (as well as all subsequent emotion-type analyses of environmental protection and nuclear weapons control). Finally, beliefs about group equality had pervasive effects and was significant in all models.

DISCUSSION

These results show that being in Hawaii and having emotional reactions to the missile threat were significantly and positively correlated with concern about controlling the spread of nuclear weapons, relative to participants not in Hawaii. Emotions of all types mattered in the nuclear domain: fear, anger, shock, and sadness. Strong emotions of fear were significant and positive for controlling nuclear weapons, which makes sense given the nature of the threat and fear of death or harm. This is informative because multiple studies have shown fear to have demobilizing effects; however, this is typically evaluated for activism and in relation to repression. We find that fear stemming directly from a threat

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Table 5. The Effects of Anger on the Importance of Issue-Specific Activities

	Model 1 Environment		*Model 2 Climate Change*		*Model 3 Nuclear Weapons*	
HI Anger Strong	0.299	(0.270)	0.164	(0.310)	1.008***	(0.288)
HI Anger Weak	0.215	(0.157)	0.186	(0.180)	0.375*	(0.167)
Togetherness	−0.026	(0.136)	−0.085	(0.156)	−0.073	(0.145)
Divisiveness	−0.003	(0.134)	−0.026	(0.154)	0.026	(0.143)
Age	−0.013**	(0.005)	−0.014*	(0.006)	0.003	(0.005)
Sex	0.274*	(0.116)	0.309*	(0.134)	0.197	(0.124)
Race	0.247+	(0.127)	0.162	(0.146)	0.118	(0.136)
Politics	−0.303***	(0.039)	−0.447***	(0.045)	−0.089*	(0.042)
Education	0.078+	(0.044)	0.114*	(0.051)	0.062	(0.047)
Income	0.021	(0.018)	0.034	(0.021)	0.043*	(0.019)
Married	−0.090	(0.134)	−0.175	(0.154)	−0.306*	(0.143)
Children	0.443**	(0.136)	0.220	(0.157)	0.357*	(0.145)
Trust	−0.030	(0.040)	−0.066	(0.046)	−0.011	(0.042)
Group Equality	0.318***	(0.055)	0.366***	(0.064)	0.304***	(0.059)
Survey Time	0.002	(0.002)	0.002	(0.002)	−0.002	(0.002)
Data Source	−0.082	(0.133)	−0.191	(0.152)	−0.167	(0.141)
Constant	3.809***	(0.564)	3.972***	(0.647)	3.055***	(0.601)
N	381		381		381	
R^2	0.306		0.369		0.136	

Notes: Standard errors in parentheses. Unstandardized coefficients are presented. + p<.10, * p<.05, ** p<.01, *** p<.001. Two-tailed tests. Adjusted R^2.

increases perceptions that the issue is important. This, in turn, may expand the mobilization potential: the reservoir of people who could be mobilized by a social movement, which includes people who have positive attitudes toward the movement's goals and are willing to participate in activism (Klandermans and Oegema 1987). Anger, too, increased concern about the importance of controlling nuclear weapons, supporting extant literature's findings on the potential mobilizing effects of moral outrage (Jasper 2018).

One interesting finding is that there was a shadow effect from the nuclear threat that crossed over into other arenas. While the more-often studied emotions of anger and fear did have strong effects on the directly relevant outcome of nuclear weapons, it was sadness that most influenced attitudes on environmental issues. Emotions like anger run hot, spurring action. But could a less arousing emotion, like sadness, trigger a different set of consequences, such as thoughtfulness and reflection? This might explain its ability to influence different domains. Believing that a missile is imminent is likely to raise concerns about self and loved ones, but people might also look out the window and contemplate all of it being destroyed, flora and fauna included. In the face of such complete annihilation, concern for the environment could become permanently elevated. It is also possible that staring down the barrel of an apocalypse in one form (nuclear) could make future looming crises more believable. Climate change, unchecked, will have significant effects on both human populations and ecosystems. There are a number of inherent difficulties to the public's understanding of climate change (Weber and Stern 2011), as well as psychological barriers, i.e., "the dragons of inaction" (Gifford 2011), that make taking action on climate change and environmental sustainability difficult. Perhaps being able to "feel" the possibility of an imminent loss of life helps to form an emotional bridge to understanding future losses due to climate change. And feelings of sadness may be particularly central

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Table 6. The Effects of Shock on the Importance of Issue-Specific Activities

	Model 1 *Environment*		*Model 2* *Climate Change*		*Model 3* *Nuclear Weapons*	
HI Shock Strong	0.297	(0.192)	0.238	(0.221)	0.614**	(0.206)
HI Shock Weak	0.184	(0.170)	0.145	(0.195)	0.393*	(0.182)
Togetherness	−0.028	(0.136)	−0.086	(0.156)	−0.081	(0.145)
Divisiveness	−0.003	(0.134)	−0.028	(0.154)	0.030	(0.144)
Age	−0.013*	(0.005)	−0.014*	(0.006)	0.004	(0.005)
Sex	0.269*	(0.117)	0.301*	(0.134)	0.203	(0.125)
Race	0.250+	(0.127)	0.163	(0.146)	0.131	(0.136)
Politics	−0.303***	(0.039)	−0.447***	(0.045)	−0.091*	(0.042)
Education	0.076+	(0.044)	0.113*	(0.051)	0.054	(0.048)
Income	0.022	(0.018)	0.034+	(0.021)	0.046*	(0.019)
Married	−0.090	(0.134)	−0.175	(0.154)	−0.302*	(0.144)
Children	0.439**	(0.136)	0.212	(0.157)	0.373*	(0.146)
Trust	−0.029	(0.040)	−0.065	(0.046)	−0.012	(0.043)
Group Equality	0.317***	(0.055)	0.367***	(0.063)	0.296***	(0.059)
Survey Time	0.002	(0.002)	0.002	(0.002)	−0.002	(0.002)
Data Source	−0.085	(0.133)	−0.196	(0.152)	−0.157	(0.142)
Constant	3.811***	(0.564)	3.972***	(0.647)	3.066***	(0.604)
N	381		381		381	
R^2	0.306		0.370		0.128	

Notes: Standard errors in parentheses. Unstandardized coefficients are presented. + p<.10, * p<.05, ** p<.01, *** p<.001. Two-tailed tests. Adjusted R^2.

to forming this connection. This then could help address one of the primary difficulties in raising concern about climate change –that people believe it is too distant and abstract to affect their own lives. Indeed, the lack of significant effects for infrastructure and education lend credence to this argument. We included them to assess whether experiencing an event that made mortality more salient resulted in more future-forward thinking, such as investing in infrastructure and education. Theoretically, one could worry about the destruction of bridges and roads due to a nuclear bomb, but it certainly pulls on the heart strings less than a radioactive ocean or flattened forest.

It is also worth noting that sounding the drums of war inspired greater willingness to participate in activism, an effect not found through messages of peace and togetherness. Literature finds that there is mobilizing power to threats (Almeida 2019; McVeigh 1999). Our results suggest that being exposed to wording that evokes the idea of threats, divisiveness, and enemies may translate into greater willingness to engage in political action. Overall, our attempts at using messaging after the crisis to influence participants' attitudes was largely ineffective. This could be due to weaknesses in the experimental manipulation; there may be stronger ways to communicate these messages than quotations from admired leaders. But it also could attest to the strength of what really matters: experiencing and reacting to the threat itself.

Several demographic and control variables were significant in the models. Group equality captures opinions about hierarchy or egalitarianism across groups in society and appears to have far-reaching effects. Also, of interest is the effect of having children. Arguably, having children raises the stakes of future-oriented issues, and we did see higher levels of concern for parents in arenas such as education, the environment, and nuclear weapons. This could be due to the recognition that action is not just to be taken for current generations, but to protect a world for future ones as well. But having children

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also increased willingness to engage in activism, running counter to biographical availability which suggests that they will serve as a constraint (Wiltfang and McAdam 1991). Here, though, they seem to inspire action, perhaps by making action seem more urgent or needed, not just personally but for one's children.

Finally, the effects of political orientation were quite interesting. As expected, political orientation had strong effects in the environment and climate change models, with conservatives placing lower importance on these issues than liberals. Puzzling, though, is that it played a much smaller role in the control of nuclear weapons. Nuclear disarmament and peace movements have traditionally been associated with leftist politics. So why was the effect of political affiliation so comparatively weak? One idea is that the threat itself had cross-cutting effects, raising concern about the issue for people across the political spectrum. Emotional reactions had strong and pervasive effects in the nuclear domain, suggesting that such emotions became more powerful than typical demographic influences in determining support for an issue. Indeed, in terms of effect size, the effect of emotions was larger than the effect of political identity. Perhaps such threats move conversation out of the more abstract "identity and values" realm and into the concrete "this is a specific problem that we need to address" realm. This could be promising for overcoming partisan differences on issues.

It is important to note that there are limitations to the study; natural experiments lack the control of laboratory experiments, allowing for the greater possibility of confounding influences. It is difficult to separate the effects of being in Hawaii from the effects of the missile scare, which could matter given its political leanings and status as an island in an era of climate change. We tried to minimize such effects through selection of our control group and inclusion of statistical controls, but the possibility remains. In terms of climate change, we did look at survey data by state in response to a question close to our own and found similar baseline rates between our control states and Hawaii (percentage of respondents who think citizens should do more to address global warming: CA: 67 percent OR: 65 percent RI: 65 percent NJ: 69 percent HI: 69 percent) (Marlon et al. 2019). Further, studying the effect of emotions offers an advantage in terms of analytic clarity. If the effects were limited to traits associated with being in Hawaii, we would not predict any differences across those strongly emotionally affected and weakly emotionally affected by the ballistic missile threats, since both groups are in Hawaii. But we do see such differences, repeatedly across models. This suggests that the missile scare, and its resulting emotional impact, is the source of at least some of these effects. Notably, the missile scare was featured on the national news. So even people in our "control" states were likely aware of the threat. Thus, the real experimental condition is one of increased salience, and a feeling of personal threat, not merely one of awareness. Another limitation is that the emotions are self-reported, and people might misremember or downplay their reactions, especially after realizing the missile alert was false. However, this is an area where the mixed research methods design could provide an advantage. The survey starts by asking respondents to remember and walk through their experiences during the time period of the missile crisis, which could result in more thoughtful or accurate answers in the survey section. Finally, our study looked at short-term effects, those that emerged within a week of the event, and whether such effects are ephemeral or long-lasting is a question for a longer-term follow-up study. But we can say that the spark was there—for those most emotionally affected, the threat of nuclear weapons was no longer a distant possibility, but an issue that required action.

CONCLUSION

A nuclear bomb causes more than just death—it causes destruction. There are losses from the immediate impact, but also there is the potential for radioactive fallout and long-term environmental contamination affecting both ecosystems and future generations. Thus, not just an individual, but surrounding natural areas, community structures (attachment to place), neighbors and loved ones, are all at risk. A person's veritable universe can be obliterated. In interviews with Hiroshima survivors,

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Robert Jay Lifton encountered concerns that "none can escape the poison" but also concerns that "trees, grass, and flowers would never again grow in Hiroshima" (1964:197). He goes on to write that the second was conveyed more emotionally and more frequently than the first; survivors feared that "Nature was drying up altogether; life was being extinguished at its source—suggesting an ultimate form of desolation which not only encompassed human death but went beyond it" (p. 197).

Despite the horrors such a weapon can yield, remarkably few think about it in their daily lives. The nuclear issue seems complex and hard to reconcile, the potential effects unlikely and distant. Climate change, too, has many of the traits of nuclear disarmament—complicated, abstract, requires international coordination, distant, and seen as unlikely to personally affect an individual. Perhaps these are exactly the traits of an issue where a threat has the most potential to change opinions and behaviors—issues that feel unreal and divorced from everyday life, ones that seem abstract and improbable until they arrive at the doorstep. And it is possible that personally experiencing the effects of a threat can transform it from surreal to real, increasing the perception that it is an immediate problem worth addressing. By forging a personal connection to an abstract problem, threats and emotions may be one way to overcome some of the barriers faced by more intangible, long-term, or future-oriented issue-based movements as activists work to rally the public to their cause. Specifically, such events could create a window that increases the effectiveness of strategies such as investing in public outreach and education, tying the threat to larger social or environmental problems, and drawing clear connections between threat prevention and movement goals.

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